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FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

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A REVOLUTION IN SURGERY.

Nearly all of us—all, in fact, except the very youngest graduates—can remember the surgical period in which bathing a wound with water was usually the earliest first-aid measure adopted, and thorough washing of the skin with soap and water was held to be an indispensable preliminary to any operation. It is only a few years ago that what may be called the tincture of iodine method, now well known to most practitioners, was introduced both for skin sterilization and the treatment of wounds. The new methods gained ground with remarkable rapidity; and twelve months ago it was fair to say that their superiority over the old ones was generally recognised in both our own and the medical professions. Most men preferred them for hospital work; nearly all recognised their advantages in every-day practice. The war seems to have confirmed them in professional favour, especially with regard to first-aid treatment of wounds. More than that, so far as wound treatment is concerned, the war will do a great deal to popularise the first-aid use of iodine with the public.

This marks a genuine revolution in surgical practice. It is not a revolution in the sense of being the discovery of a specific medicament, although most men continue to employ the drug originally introduced with the method. Other drugs have been and are used as substitutes, and still others will be; and it is quite possible that tincture of iodine may be superseded. The real revolution lies in the abstention from soaking the tissues with water—water which, in the case of first aid wound treatment, is practically never sterile, and often grossly contaminated.

In skin sterilisation and wound treatment alike, the best results seem to be gained without the use of water; and the effect of the discovery upon veterinary practice will be considerable.

For veterinary operations, the advantages of the iodine method of skin sterilisation are patent. Many clinicians never adopted the old cumbersome technique of shaving, washing, and scrubbing, regarding it as impracticable; and, though too much was made of this objection, it undoubtedly applied to many cases. No such complaint can be urged against the rapid and simple iodine technique, which enables a clinician to at least approximate an aseptic operation in cases which he formerly might have hesitated to operate at all. That is a great advance; but perhaps a greater one is in wound treatment. We all know what used to happen to a wounded animal—the wound was promptly washed with non-sterile water and a dirty sponge or rag. Thousands of men who have been or will be attendants upon animals are now learning a more rational method of first-aid in the army.

THE TREATMENT OF EQUINE PURPURA HÆMORRHAGICA WITH HÆMOSTATIC GELATINE.

Schmidt and Meyer last year published an article upon this treatment (*Deutsche Tier. Woch.*). In equine purpura hæmorrhagica, in addition to vasodilatation, there is a qualitative alteration of the blood, which is considerably diluted, and shows typical hæmolysis. The authors sought to remedy these alterations by injecting hæmostatic gelatine, which is known to augment the coagulability of the blood, into the affected animals. The fluidified gelatine was injected subcutaneously in a single dose of from 200 c.c. to 600 c.c. The authors had excellent results with this treatment in seven typical cases of purpura hæmorrhagica; and, on the basis of their experience, they arrive at the following conclusions.

The subcutaneous injection of hæmostatic gelatine has a favourable influence upon the course of purpura hæmorrhagica. A dose of 400 c.c. may be regarded as an average one, and in general a single injection is sufficient. In consequence of the treatment, a slight tumefaction is seen at the point of injection; but this is unimportant, and disappears after a few days. A slight rise in temperature of about 1.4° F. is also seen; and this is followed after twenty hours by a diminution of the temperature until the normal level is reached. In severe cases the gelatine, in addition to being injected subcutaneously, may also be administered by the mouth. —(*La Clinica Veterinaria*).

NAPHTHOL POISONING IN HORSES.

Rudolf Redecha has reported the following observation of a number of mangy horses which, by the directions of a veterinary surgeon, were dressed with a naphthol ointment (*Állatorvosi Lapok*). One horse died upon the day of the dressing; the others were brought into hospital. The history given was that, a quarter of an hour after the dressing, the horses showed restlessness, trembling, and difficulty of breathing. Afterwards they lay down and remained lying quietly; but the difficulty of breathing persisted. In the hospital the horses were very restless, moving hither and thither. The temperature was about 102.4° F. A yellowish-red foamy discharge came from the nostrils; and the breathing was laboured and rattling. The respirations numbered 42 to the minute. The borders of the lungs were displaced backwards for a distance of three fingers' breadth; and bronchial respiratory sounds and wheezing were heard over the lung. The pulse was weak, and numbered 52 to the minute. Dissolved blood pigments were demonstrable in the urine.

The naphthol ointment was washed off; and caffeine and atropine were injected subcutaneously. Despite this treatment, one other horse died. Post-mortem examination of this animal showed acute inflammation in the larynx, trachea, and bronchi, hyperæmia and œdema of the lungs, and acute dilatation of the lungs. The other horses all recovered within a week.—(*Berliner Tier. Woch.*)

Successful amputation of extensively Prolapsed Rectum in a Mare.

L. J. Fabritius, Jun., of Abo, Finland, has recorded this case, which occurred in 1909. A six-year-old pedigree mare, early in the morning, gave birth without assistance to a dead foal. It seemed probable from the owner's description, that the presentation had been a posterior one, and that the hind feet of the foal had perforated the upper wall of the vagina, causing delivery to take place per anum. Immediately after parturition, as a consequence of the violent expulsive efforts, a prolapse of the rectum appeared. At first this was small; but in the course of the day it increased till the prolapsed gut reached down to the hocks.

Fabritius did not see the mare till about ten o'clock that night. She was then quite collapsed, lying with all four limbs extended and with the prolapsed intestine, now black-red in colour, upon the ground. Fabritius decided to attempt a radical operation, which he proceeded at once to perform under exceedingly unfavourable conditions. The latter, which he emphasises, may be summarised by saying that the operation had to be carried out at midnight, in a narrow, dirty, and very ill-lighted stable, and with no other assistance but that which could be obtained from two youths.

The technique of the operation is briefly described. A lukewarm alum solution was used as a disinfectant. The prolapsed intestine was drawn out still further, till it was possible to apply two situation-sutures cross-wise, one horizontal and one vertical, in sound and undamaged tissue. The intestine was then slit longitudinally, so that the left hand could be introduced into the lumen; and the two adjacent serous-covered intestinal surfaces were brought together by means of fourteen strong silk sutures. The prolapsed intestine was then removed with scissors about four-fifths of an inch behind these serous sutures. Ten more sutures were applied to unite the mucous edges; the situation-sutures were knotted and cut off short; and the intestinal stump was allowed to be drawn back into the pelvic cavity by the tension exerted upon it by the intestines still in the pelvis. The excised portion of intestine measured 220 centimetres (= about 7 ft. 2½ ins.).

Some strong silk sutures were also applied to the recto-vaginal fistula; but these were only provisional, as the collapsed condition of the mare rendered it inadvisable to do more than necessary. The author left written instructions as to treatment, diet, etc., and did not see the case again for eighteen days.

He then found that the sutured intestinal excision-wound had completely healed. Two fibrous proliferations had appeared at the seat of the sutures, and in some degree impeded the passage of fæces. These were removed with scissors. The sutures in the recto-vaginal fistula had torn away; so the author curetted the edges of the fistula and applied new sutures. After this, he did not see the case again.

About seven and a half months later he was again shown the same mare—just bought by a new owner, who sought advice on account of defecation taking place through the vagina. Examination revealed that the old sutures had torn away, and that a permanent recto-vaginal fistula of considerable size remained. The fistula was roughly about 6-2/5 ins. long by 3-1/5 ins. broad, and ran obliquely from behind forwards to the left. The author undertook a radical operation, which he describes in detail. It was immediately successful so far as the posterior two-thirds of the fistula was concerned; but the sutures of the anterior third, though three times renewed, persistently tore away. A small fistula therefore persisted; but subsequent cicatricial contraction narrowed this so much that it would at most permit of the passage of two fingers. Eighteen months after the radical operation the mare was in good condition, defecation chiefly took place per anum, and the small amount of fæces which from time to time escaped through the fistula apparently caused the mare no trouble.—(*Berliner Tier. Woch.*) W. R. C.

(It is not clearly stated why so little professional attention was given the mare after the first operation—but various remarks of the author convey the impression that the client was an unsatisfactory one.—*Transl.*).

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Seated :— Maj. J. Alex. Todd, Col. R. W. Raymond, *(A.D.V.S. 1st Army.)* Col. J. A. Meredith, *(A.D.V.S. Welsh Division.)* Maj. D. M. Storrar, T.D., Capt. J. Scott Bowden.

A MALFORMATION.

I am enclosing two photographs of a case which I thought might be of interest to the profession. The subject is a Canadian-bred light draught, which entered this depot a fortnight ago. The glans penis is well developed, being quite two inches in diameter. The vaginal opening is about an inch-and-a-half above the penis, and an inch in length. JOHN PUGH, Lieut. A.V.C.

Swaythling Remount Depot.

PRECIPITINS IN THE DIAGNOSIS OF ANTHRAX.

By Dr. A. ASCOLI, of the High School of Veterinary Medicine, Milan (Investigations at the Serotherapic Institute, Milan). [Abridged.]

Working with material from a fresh carcase, microscopical and bacteriological research is not difficult, but it becomes more and more uncertain when one has to deal with decomposed material, such as almost always reaches the laboratories more than twenty-four hours after the death of the animal. It then becomes necessary to have recourse to isolation, and to experimental inoculations. More often these latter give no positive results: isolation of the germs, on the other hand, offers more probability of success, but becomes doubtful or impossible if decomposition is far advanced.

Several methods have been devised to conserve infected material in transference to the laboratory. One of the most approved among German veterinarians is drying, which favours sporulation, and renders isolation more easy. The process consists in the use of small sticks of gypsum, previously impregnated with bouillon and sterilised in a test tube: these sticks receive a fine coating of suspected pulp from the surface of a fresh section.

Still, in spite of all efforts, the bacteriological diagnosis of anthrax does not yet offer us an absolute certainty. If positive results may be accepted as reliable, negative results are a long way from decisive. Among the causes of failure must be reckoned the low resistance of bacillary forms in the carcase; they disappear in from 24 to 48 hours, and thus show the cause of the apparently contradictory facts that a bacteriological examination at first positive may become negative, and that such examinations give a negative result in a number of cases where anthrax is positively indicated by clinical, anatomical and epidemiological evidence.

THE PRECIPITIN OF ANTHRAX.

In attacking the problem by the isolation of the microbe, the bacteriologist completely neglects to search for the bacillary constituents resulting from bacteriolysis. Reason indicates that these constituents should occur in material sent to the laboratory in inverse proportion to the quantity of micro-organisms remaining intact, and consequently in greater quantity in the material which is most altered.

Happily, sero-diagnostic methods enable us to recover these substances. As, in certain definite conditions, the precipitant action of anti-human serum serves to identify a spot of human blood, so the precipitant action of an anti-anthraxed* serum will indicate anthraxed protoplasm in a pulp or blood in which it exists.

It may be presumed that attempts have been made to apply the use of precipitins in the diagnosis of anthrax, but without accepted results. It must be noted that it is quite exceptional to find an anti-anthrax precipitant. Among the few savants who have had the chance of finding a precipitant serum may be first cited Bail, who did not differentiate the specific precipitant action from the coagulating of normal serum: then Carini, who thought he had to deal with an agglutinating action, and afterwards Gruber, who held the correct view, observed the precipitant action of the serum, but kept silence. Possibly he thought himself mistaken because, on experimenting with other serums he failed to find the action again.

I would again point out that these active precipitant serums occur but rarely: out of the 40 anti-anthrax serums of our Institute the precipitant action was recognised in only four, and of these two were derived from the ass.

With the object of finding a method which would allow the preparation, easily and at any time, of a precipitant serum, we asked the directors of Serotherapic Institutes to send us of their anti-anthrax serums; hoping to find trace in a large number of serums, by the aid of facts relating to the method used in the immunization of the subjects, the conditions most favourable for the preparation of the precipitin. I have to express here my very sincere thanks to the Professors Kolle (director of the Institute of Berne), and Detre, (director of the Institute Jenner-Pasteur, Budapest), who responded very willingly to our enquiry.

None of the serums from Budapest showed a pricipitant: a sample from Berne possessed a well pronounced power of precipitation, equal to the best serums of the same nature. The serums of Budapest came from the horse; that of Berne had been drawn from the ass. It then occurred to me that possibly the ass might be more suitable than the horse for the production of active serum, but it has since come out that the ass does not always produce a precipitant serum—we have several samples in our institute which have shown no power of precipitation. The mule also may yield a precipitant serum.

We have produced a precipitin of anthrax from the horse, ox, mule, goat, by taking the precaution to examine the blood periodically in the course of their immunisation.

I have found no evidence of the superiority of intravenous over subcutaneous injections, nor of the power of certain antigens as compared with others. An interesting peculiarity I noted with a horse which furnished a good precipitant serum. The animal had been tested many times systematically and periodically without the serum giving the least precipitant action; at last this appeared, suddenly, and without any appreciable determining cause. The production of precipitins depends on factors in the individual which escape us. This is evidenced by the differing results obtained in immunising the larger animals with the same cultures, the same doses, and the same methods; and similarly, experiments on laboratory animals have not given sufficiently regular results.

In our attempts, principally with rabbits, occasionally with guinea-pigs, we were guided by the fact that, in the larger animals precipitant action developed usually after the injection of quantities of anthraxed material greater than sufficed ordinarily to produce an active anti-anthrax serum. This makes it appear that the quantity of protoplasmic material introduced is the dominant factor, and that the relative virulence is unimportant. We have, therefore, been led to use large doses of avirulent cultures, and thus avoid the loss resulting from the use of virulent bacilli. Our preference for attenuated cultures is explained by the much greater rapidity obtained in the process of immunisation, for we have occasion to apply the rapid process proposed by Fornet and Müller, not from the fear of anaphylactic shock during the preparation, but because it is considered the best in the preparation of precipitant serums.

* "Anthraxed" is here used to avoid a second meaning to the word "anthracoid."

As a result of my later experiments, the preparation of a precipitant serum may be effected in a classic manner with a quite regular curve of immunisation, by the use of avirulent germs injected intravenously in the larger animals, by preference in the ass. With a little practice good precipitant serums may be prepared.

Diagnosis with Precipitin.

The precipitin of anthrax contained in the precipitant serums has produced the immediate appearance of the characteristic zonal reaction with extracts in physiological solution of all anthraxed cultures tested: the 35 cultures tested up to the present have always given a definite reaction with serums known to be active.

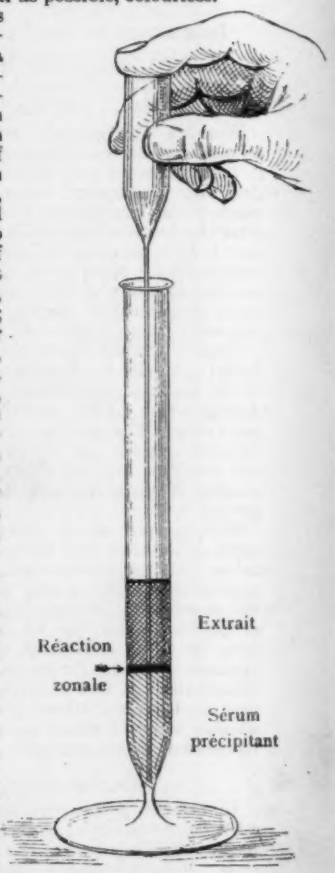
Never have we been able to produce a positive reaction with extracts of organs which were certainly not anthraxed. The precipito-reaction reveals the presence of anthraxed protoplasm in the organs (spleen, lungs, liver, kidneys, suprarenals, intestine), in the blood, in œdematous fluid, in the effusions from bovines and ovines naturally, and from guinea pigs, rabbits, the horse, ass, and sheep experimentally infected with anthrax. Putrefaction, which renders bacteriological research so delicate, and well-nigh impossible, no way affects this precipitin reaction, which may be obtained even after a year and more. We have obtained a positive reaction from putrefied material after 16 months, from over 100 animals shown to be anthraxed by the usual tests.

Broadly, the intensity of the reaction is proportionate to the numbers of anthrax bacilli in the material under examination. Thus the result with the splenic pulp from bovines dead from anthrax is constantly positive; the spleen is generally richer in bacilli than that of anthraxed guinea-pigs. Similarly the reaction is given in higher dilutions of extracts from spleens of bovines.

The condition necessary for success of the tests is the availability of a good precipitant serum. The titrage of an anthrax precipitant cannot be determined by the method of dilutions which gives with exactitude the value of precipitant serums for albumins. The process of boiling with the addition of nitric acid cannot be applied here, since we do not know the chemical nature of the bacillary precipitinogene; the reactions common to the proteins—the biuret excepted—being negative with extracts of anthrax bacilli. If the titre of a serum precipitant for anthrax is based on the method of dilutions it will vary according to the saturation of the extract, which is too often subject to oscillations caused by the greater or less virulence of the cultivation, by the age of the culture, by the number of bacilli, by the process used in extraction, by the temperature. The weight of dried residue cannot be utilised for the purpose, for it is not necessarily the expression of the content in precipitant substance. With my extracts prepared at normal temperature, using a physiological solution, the zonal reaction, on the addition of a strongly precipitant serum, becomes negative if the dilution of the extract is but a little over 1:200; with other extracts, highly concentrated, the same serum gives a positive reaction in dilutions up to 1:5000. For this reason, in testing the action of serums, I have given up using dilutions, and use the two agents—serum and extract without diluting them.

The serum is tried with two extracts prepared with physiological solution, one from a culture of the germ on agar, the other from an anthraxed spleen. The serum, prepared in a manner to be described later, should give instantaneously a zonal reaction, whilst the control, with a normal serum will not show the characteristic ring immediately, nor until a quarter of an hour, or thereabouts, after stratification. This control is necessary, for though there is ordinarily no reaction with the serum of animals which are normal, or which have been immunised against other germs (diphtheritic, tetanic, dysenteric, pneumonococcic, typhic, colic, adenitis of the horse) it happens that, using two concentrated extracts of cultures, a ring appears in the control—especially if fresh serum is used. This occurs very rarely, and may easily be avoided by a judicious dilution of this extract, or by substituting another. This not only indicates that a test of the control is indispensible, but also explains the error of Bail when he confounded the precipitin of anthrax with the precipitant power of normal serum. This preliminary verification of its activity should be practised with each serum used in diagnosis. It is indispensible that the reacting fluids should be clear, and as far as possible, colourless.

The first operation is the preparation of extracts. This requires a 24 hours culture of anthrax or vaccine on gelose, and a spleen from an animal dead from anthrax. An extract of the culture is made with physiological solution, which should be added in the proportion of 5 to 10 c.cm. to each tube of ordinary gelose, and left in contact for two hours, at normal temperature; filtered through paper or asbestos, it gives a clear, slightly yellow filtrate. The spleen, first brayed, should be emulsified with chloroform in the proportion of 10 c.c. to each spleen of a guinea-pig, or like quantity of any other spleen; after about five hours at normal temperature, the chloroform is decanted, and the pulp emulsionised in about 5 c.cm. of physiological solution; after two hours it is filtered. The precipitant and normal serums are clarified by filtering through asbestos, or by bougie, or by centrifuge.



Pasteur pipette.

The re-agents being thus prepared, into two small test tubes are placed some drops of the extract of culture, and in two other tubes some of the extract of spleen. Each extract is tested with the precipitating and the normal serum, deposited in similar quantity *under* the two extracts by means of two Pasteur pipettes. (fig.) A positive result answering the postulates is given when the characteristic ring appears instantaneously in the tubes containing the precipitating serum; and is completely absent after a quarter of an hour at normal temperature, in the tubes with normal serum.

In laboratories these controls should never be neglected; likewise, an extract of suspected material should be tried not only with precipitant serum, but also with the corresponding normal serum. Exceptionally, in cases where there may be a doubt if the material to be examined has been infected with pseudo-anthrax,

which may react to the precipitating serum, it is well to try this latter with dilutions of the extracts at 1: 10, 50, 100. In such conditions the reaction remains positive with anthraxed material, but it is negative with material that is not anthraxed.

The veterinarian will practise with less rigorous, but, in our opinion, sufficient controls, and more suitable for practical purposes; inasmuch as, unlike the laboratories, he has at his disposal material in fresh condition, and, therefore, less exposed to the causes of error. It will become the duty of institutes and manufacturing firms to supply the veterinarian with precipitant serums, clarified and standardised, which will leave him to deal only with the suspected material.

The thermo-precipitin method is even more rapid. A test tube is half filled with physiological solution, a few grammes of suspected material are added, and the tube is placed for some minutes in boiling water. After cooling, this is turned into a pipette (fig.) which has a filter of asbestos in the upper portion, and the pipe shortened and bent to deliver the filtrant against the side of the tube rather above the level of the precipitant serum, which has been previously placed in a tube with a foot, and "choked" at its lower end. The filtrate is thus deposited gently *on the surface* of the serum, and the characteristic zonal reaction will develop.

W. H. B.

Foot-and-Mouth Disease.

By A. D. Melvin and J. R. Mohler, Washington, D.C.

Read by Doctor Mohler at the 18th annual meeting of the United States Live Stock Sanitary Association, convened in the red room of the La Salle Hotel at Chicago, Ill., on February 16th. * [Abridged.]

(*Continued from page 568.*)

In considering the losses from this disease, the mortality is not the only factor to be mentioned. The death rate in the benign form of the malady may be only 3 per cent., while in the malignant form of the disease it may reach from 30 to 40 per cent. and even more of the affected animals. On the other hand, the mortality among calves in the benign form of the infection is considerable.

Although as a rule infected animals respond quickly to medicinal treatment, the Department does not advise such treatment of animals suffering with foot-and-mouth disease. If diseased animals were held for treatment, they would be a source of infection for some weeks or months, and if this plan were generally followed we should probably never be able to get rid of the disease. The malady is of such a highly contagious character, and the infection is so easily spread, that during the period of treatment one animal might communicate it to hundreds of others. Experience in European countries has shewn the futility of attempting to eradicate the disease by curing individual animals. The affected animals that have passed through the disease become a source of further infection as virus carriers for weeks and months, even after they have apparently recovered, and are susceptible to re-infection as one attack does not confer permanent immunity.

It is a known fact that many of the infectious diseases of man, such as typhoid fever, cholera, plague and diphtheria are spread by so-called bacillus or virus carriers. Such carriers may also occur in different diseases of animals, although definite data on virus carriers in animals have been established only in foot-and-mouth disease, Malta fever, and equine influenza. The possibility of such carriers existing in other diseases of animals, such as hog-cholera has been intimated by Hutyra and other prominent authorities. The occurence of virus carriers after the recovery of foot-and-mouth disease was first recognised by Loeffler in 1904, and is of special importance in countries where eradication is conducted with only quarantine and veterinary police measures.

The solution of this problem offers many difficulties. In foot-and-mouth disease—unlike typhoid fever or diphtheria—the infective agent cannot be determined bacteriologically, since here we have to deal with an ultra-visible virus.

In 1905, Nevermann pointed out in an official report that an animal recovered from foot-and-mouth disease introduced the infection to another herd after a lapse of eight months. Later, the Ministry of Wurtemburg reported two cases in 1907 in which recovered animals acting as virus carriers transmitted the disease. Further, Loeffler mentioned similar cases, and in his report suggested that all animals which are used for experimental work on foot-and-mouth disease should be slaughtered after the conclusion of the experiment. Again, at the Ninth International Veterinary Congress, Loeffler and Nevermann reported further observations on virus carriers of foot-and-mouth disease. The conclusions of Prof. Loeffler are as follows:—

"Regular supervision of such farms is indispensably required.

One of the most important results of the researches concerning foot-and-mouth disease is that the fact has been doubtless ascertained that, just as in numerous human infectious diseases, some of the recovered animals will remain carriers and continue the spreading of the virus.

It seems that the number of such animals is limited.

How long such animals can spread the virus has not yet been ascertained. According to the experience gathered up to the present moment even seven months after the end of the epizootic new infections have been caused by them.

As yet no method is known to discriminate the virus spreaders.

Infected animals are to be placed under observation during at least seven months. They must not be offered for sale, and should be kept separated from healthy animals."

Nevermann, in his report on foot-and-mouth disease prepared for the Tenth International Veterinary Congress held in London in 1914, attached great importance to the virus carriers in connection with the spread of this infection. He claimed that in the control of foot-and-mouth disease, it is absolutely necessary to give the so-called virus carriers due consideration, as otherwise the results of the measures inaugurated for the eradication of the disease may prove fruitless. He also cited numerous instances in which virus carriers were indisputably the propagators of the disease. Such observations have been made, especially during the last outbreaks in Germany, which afforded the authorities a splendid opportunity for collecting data on this phase of the disease. All the governmental veterinarians received instructions to make close observations relative to each outbreak with a view to tracing its origin. Special reports were required in all instances where the disease could be traced to virus carriers. As a result of these steps, Nevermann was in a position to publish in the last annual report of the veterinary officers of Prussia over one hundred outbreaks reported from different parts of the country in which virus carriers were apparently responsible for the dissemination of the disease. Naturally it was impossible to establish with possible certainty that in each instance the virus carriers spread the disease, or that other factors might not have been responsible for the outbreaks; nevertheless, in considering the large number of outbreaks

* Reprinted from *The American Veterinary Review.*

reported to be due to such a source of infection, we must accept that the careful observations of the district veterinarians include only such cases as were obviously traceable to virus carriers.

The outbreaks in which the infection occurs after the lapse of a prolonged period following the recovery of infected animals may be divided into two groups: The first group would embrace those cases in which susceptible animals are placed into previously infected stables and subsequently become infected—in such cases it might be possible that the virus was still present in some remote places not reached by the disinfectant. The second group would include the cases in which recovered animals after the disappearance of the disease are introduced into healthy herds. In these cases the disease usually appears among the animals of the healthy herd only after several weeks, and at times even after months: while the animals which brought the infection do not become infected.

Investigations which have been conducted to determine what part of the recovered animal harbours the infection have not been uniform in their results. Some investigators have found that the saliva of a recovered animal was responsible for the spread of disease. In other cases, the virus is supposed to have been spread from the crevices in the hoof. The recent studies of Zschokke are particularly interesting on this phase of the subject. He undertook the work of establishing to what extent the feet of recovered animals may be responsible for the dissemination of disease, and according to his findings, the vesicles which occur in the skin of the interdigital spaces and the plantar cushion may also extend under the horny capsule forming their furrow-like spaces along the sensitive laminae of the wall and sole. He also found hidden vesicles in the hoof which did not open to the outside. It therefore appears possible that virulent lymph which is present in these locations penetrates between the horny structure where it becomes enclosed until it is brought to the surface by the natural wearing of the hoof, and is then responsible for the transmission of the disease. The findings of Zschokke would explain the possibility of the occurrence of the disease in localities in which animals harbouring the virus in such fashion are introduced into healthy herds, and it is considered possible that the greatest proportion of the virus carriers harbour the infection in this manner. In countries where the eradication of foot-and-mouth disease is conducted by the enforcement of quarantine measures, these so-called virus carriers must therefore be a constant menace to the elimination of the disease, and if for no other reason than this, it appears that whenever the circumstances permit eradication of the disease should be carried out by slaughtering the infected herd. The fact that recovered animals might transmit the disease for six or seven months to susceptible animals would cause constant uncertainty, and require a vigilance impossible of enforcement.

In order to demonstrate the extent of the spread of this disease in Germany, and to demonstrate the advisability of controlling the disease by slaughter of the infected herds in connection with sanitary and quarantine measures, authentic statistical data are given below.

The outbreak which appeared in Germany in 1888 reached its height in 1892, when 1,304,299 cattle, 2,193,187 sheep, and 4,238,262 hogs were affected with the disease. It gradually diminished after this time, but again reached very great proportions in 1899, when 1,885,774 cattle, 1,505,830 sheep, and 814,862 hogs were affected. After that time the disease gradually diminished, although it continued to exist to a greater or less extent. In 1910 it appeared to gain in virulence, and in 1911 the affection was more widely spread than ever before in the history of that country. In that year 3,366,369 cattle, 1,602,627 sheep, 53,674 goats, and 2,555,371 hogs were affected with the disease. Similar statistics could be cited from other European countries in which the policy adopted consisted in endeavours to control the disease by quarantine measures.

The prevention of such widespread epizootics among domestic animals must of necessity have a great influence upon the animal industry of the country. The losses which may be attributed to the disease, outside of the mortality, are heavy. These include the rapid loss in the condition of the animals, especially in fattened stock; the diminution in the milk yield of dairy cows, and the subsequent appearance of garget in a considerable proportion of the affected animals, with a total destruction of milk secretion in one or more quarters of the udder; likewise, abortions frequently occur in pregnant animals, and there are other complications which are associated with outbreaks of this disease. Feet complications are particularly frequent in fat stock and hogs, which not infrequently result in the sloughing of the hoofs.

Various authorities have aimed to establish the depreciation in value of an animal after an attack of foot-and-mouth disease. An English practitioner of wide experience states that it is none too high to place the loss on each animal that becomes affected and that ultimately recovers at $20 (82s.) when milch cows or feeding cattle that are nearly finished are under consideration. Other eminent authorities state that the deterioration will amount to from 20 to 30 per cent. of the value of animals. In Denmark it is figured that the depreciation in value would amount to $8 (33s.) per head, in Germany $7 (29s.), and in Holland $10 (41s.). Allowing the smallest figures to stand as the average, and considering that there are in the United States about 58,000,000 cattle, of which only 50 per cent. might become infected, the losses sustained for cattle alone would amount to over $200,000,000, without allowance for injury done to swine, sheep, goats and other susceptible animals.

The paralysing effect upon the traffic in live stock which results from the outbreak, and necessary quarantine which must be established to control the disease, and which must extend over a long period, must also be considerable from an economical standpoint during the prevalence of the contagion. In view of these circumstances it is not surprising that those who have seriously taken part in the struggle against this disease sooner or later possess the conviction that success is to be expected only from energy and resoluteness.

In the previous outbreaks of 1902 and 1908, the expenditure of the United States Government in the eradication of the disease amounted to about £60,000 in each instance. Between the three outbreaks, including the present one, there were six years intervals, and by distributing this expenditure over the intervening period the total amount per year would be only £10,000, which is very small when compared with the losses which would result if the disease had been allowed to spread over a considerable area of the country.

Experience with the disease in various countries indicates that once the infection has been allowed to spread over large areas, the contagion practically has to wear itself out before it subsides. But even then the virus will remain dormant only during the period of acquired immunity of the animals. A reduced resistance in the animals will again afford an opportunity for the virus to assert its infective action, and outbreaks will start anew with increased force. These facts probably account for the periodical curves which are noted in the presence of the disease throughout continental Europe.

In Europe, until a comparatively recent date, the disease has been combated by isolation and quarantine, and the cleaning and disinfection of infected premises, but these measures have not been effective, as is shown by the continuous existence and the wide dissemination

of the infection. The results of combating the disease without the slaughter of infected and exposed animals is shown by the statements of Professor Dammann of Hanover, who said that without absolute quarantine of the infected farms, preventing even the movement of persons, the control of foot-and-mouth disease is impossible; but this stringent measure, he states, cannot be executed in eradicating the disease, and notwithstanding the quarantine of infected stables, reinforced in many instances by the quarantine of communities, and often of a large zone around these communities, and, further, the very extended prohibition of animal traffic and the supervision exercised over abattoirs, dealers' stables, and railroad cars, the disease continued to prevail.

Professor Loeffler, of Germany, says that foot-and-mouth disease is spread more and more every year, and every year it costs the German Empire enormous sums. Necessary measures have been taken with the greatest care, suspected premises have been closely quarantined, and these measures have been extended to the whole communities, and even to entire districts, but notwithstanding that the disinfection had been carefully carried out, the disease kept spreading.

In regard to the slaughter of infected and exposed animals as one of the measures in the eradication of the disease, Professor Hess, of Switzerland, has concluded that in order to cope with the disease "the diseased animals should be destroyed completely, including hides and hair, and the exposed animals slaughtered under police supervision."

In England slaughter has been resorted to quite frequently in recent years to stamp out the disease when first introduced. Dr. Cope, speaking of the outbreak in that country while he was the chief veterinary official, said: "It was eventually stamped out in the County of Kent by the purchase, slaughter and burial of several of the affected flocks."

Dr. Fleming, of England, speaking of the outbreak in Australia, said: "There was really only one outbreak in Victoria among the cattle on two farms into which it had been introduced by an imported bull. Here the cattle were destroyed and with them the disease."

Dr. Cope refers to a communication which he received from Dr. Bang, of Copenhagen, in which Dr. Bang says: "Since 1876 we have had every year, once or twice, cases of foot-and-mouth disease; in all cases we killed the cattle, sheep and swine on the farms even if only one calf was affected." Dr. Cope stated at the International Veterinary Congress at Baden-Baden, in 1899: "We have now been free from the disease since 1894, and I can assert that at the present time foot-and-mouth disease is more dreaded by farmers and stock-owners of Great Britain than cattle-plague or pneumonia, and they are willing to put up with whatever restrictions of however drastic a character considered necessary by the central department to stamp it out."

Remmelts, in referring to the struggle against foot-and-mouth disease in the Netherlands, mentions in his report to the International Veterinary Congress in London in 1914, that "preference must by far be given to the immediate removal of virus by slaughtering diseased and suspected animals than to any other measure." By adopting such methods the extermination of existing, as well as the suppression of new virus carriers is accomplished. In his article, special stress is laid upon the necessity of properly pasteurizing all by-products of the creameries including whey, and of stopping the movement of cattle in the infected district.

Mettam, at the same Congress, gave his experience with the disease in Ireland, and stated that the animals, both infected and exposed, are slaughtered and their carcases burned or destroyed without any attempt to salvage any portion of the animal, owing to the danger of spreading the virus far and wide.

Professor Leclainche, a representative of the French Government at this Congress, likewise advocated the slaughter of diseased and exposed animals in countries where the infection has not become firmly implanted, where natural boundaries are present, or when the disease occurs in the benign form.

The above quotations are sufficient to show that the slaughter of diseased animals has been frequently adopted as a means of combating the disease in Europe, and it has been more successful than any other measure. In fact, the International Veterinary Congress held at Baden-Baden in 1899, stated in one of its resolutions passed with reference to this disease, that it was necessary to authorise slaughter and to establish uniform sanitary regulations in order to arrest and eradicate this burdensome plague.

Veterinary Dispensaries in Ireland.

Commenting on the annual report of the D.A.T.I. for Ireland, our contemporary, *The Farmers' Gazette* (Dublin), says:—

"Another scheme continued during the year was the useful Veterinary Dispensaries Scheme. During the year no new dispensary districts were added, but although two veterinary surgeons resigned their positions, and were not replaced, there are now 28 employed in 103 dispensaries. It is disappointing to know, in regard to this scheme, that 'In the case of some of the centres the people for whose benefit it was started, did not appear to be taking adequate advantage of its provisions.' The advisability of revising the list of centres in some of the districts was, therefore, wisely, under consideration."

Army Horse Dealing.

The trial, which has lasted four days, in which William Armstrong, farmer, Bradford, an assistant purchaser of Government horses during mobilisation; Richard Parker Johns, veterinary surgeon, Selby, now a lieutenant in the Army; and William Burton Cheesman, farmer, Camblesforth, were charged at Selby with conspiring to defraud farmers, has been concluded.

All the defendants denied the alleged offences.

The Bench said they had carefully considered the evidence placed before them. Some of the acts of the defendants were irregular, but their acts did not constitute a criminal offence. Defendants would be discharged.

PRACTITIONERS AND ARMY SERVICE.

Sir,

I see an urgent appeal for Officers A.V.C. in *The Record*, together with scale of remuneration. May I ask why the gratuity of £41 is not paid to Officers A.V.C. *Territorial Force* who are doing the same work, in many cases called up at a moment's notice and have made heavy sacrifices?

The writer personally knows one Brigade to which four Officers A.V.C. are attached:

No. 1. Left his practice in September last and took a temporary commission, and receives the £41 bonus.

No. 2. Was previously in the A.V.C. (T.F.); was called up at once—forced to abandon his practice and leave his house, etc., and get NO bonus.

No. 3. Offered his services in August through an A.D.V.S. (T.F.); he has been forced to abandon his lucrative practice and his large house is unlet; he gets NO bonus.

No. 4. Joined the Territorial Force (A.V.C.) late in 1914 through an A.D.V.S. (T.F.); he is practically giving the whole of his pay to a *locum tenens*, and gets NO bonus.

The one officer who happened by chance to take a temporary commission (and not through the T.F.) gets £41 in pay more than the others who are suffering *very* severely financially by the loss of their practices, etc., though they are all actually in the same Brigade.—Yours, etc.,

"SYMPATHISER."

ARMY VETERINARY SERVICE.

Extract from *London Gazette*,

WAR OFFICE, WHITEHALL, May 1.

REGULAR FORCES. ARMY VETERINARY CORPS.

Major F. W. Melhuish, Australian Army Veterinary Corps, to be temporary Major. Dated April 7.

May 4.

Temporary Lieuts. to be temporary Captains :—
J. W. F. Brittlebank. Dated Feb. 25.
G. D. Norman. Dated Feb. 26.

To be temporary Lieutenants :—
R. C. Aikenhead, W. Huston, L. H. Ellsworth, J. D. Scott, J. A. Stanford, J. M. Brand, N. Carson, C. G. Cunningham, W. R. Hill, W. G. C. Kenney, S. S. Kerr, C. F. Thompson, J. E. Williams. Dated March 24.
A. Cowan. Dated March 25.
J. J. Farrell. Dated March 26.
W. A. M. Kilpatrick, G. N. Tomlinson Dated Mar. 28.
L. Anderson. Dated April 12.
L. Herbert. Dated April 13.
W. A. Potts, R. Spittal. Dated April 14.
L. D. D. Sewell. Dated April 16.

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

Capt. J. A. Todd to be Major. Dated May 1.
G. B. Cooper to be Lieutenant. Dated May 5.
Announcement regarding appointment of Lieut. W. F. Morton, which appeared in *Gazette*, Sept. 4, is cancelled.

May 6.

Capt. E. M. Perry to be Major. Dated May 1.

In view of advertisements which have appeared soliciting help for convalescent homes for horses, the Secretary of the War Office announces that no wounded, injured, or sick horses are brought back to this country from the Expeditionary Force. There is therefore no scope for convalescent homes for them in this country.

OBITUARY

WILLIAM DAVIDSON, M.R.C.V.S., Stradbally, Queen's Co. Graduated, Lond: April, 1881.
Mr. Davidson died on Thursday, April 29th; aged 53 years.

S. WM. LEGGETT, M.R.C.V.S., Wickham Market, Suffolk. Graduated, Lond: April, 1870.
Death occurred on Friday, April 30. His age was 66.

JAMES MAHONY, V.S., Templemore, Co. Tipperary.
Died on March 12, at the age of 80.

The late Lt.-Col. J. D. E. Holmes, F.R.C.V.S.

Sir,

Your editorial referring to the value of the work of the late Lieut.-Col. Holmes, will be fully endorsed by all who realise how much he accomplished during his rather brief life.

He and I worked together throughout a long winter at the Institute Pasteur in Paris, and when we left there in the spring of 1906, Holmes worked for some time in the laboratory of Professor Blanchard at the School of Medicine, as he was much interested in the technique of research in Parasitology.

Although I was then working in the College de France, we were still close neighbours, and Holmes was very popular with the cosmopolitan community in which he lived, as his generous mind was readily sympathetic to the views and best aims of others. Before coming to France, he had worked for some time at Cambridge, and often spoke warmly of the valuable help he received there from Dr. Nuttall.

Holmes's knowledge of men, and of other nations than his own, had given him a breadth of outlook, and a sympathetic mental attitude which secured him many friends, not only among the French (in whom these very qualities may be said to be indigenous), but also among men of very diverse races, and I think I may safely say that in most of the principal countries of the civilised world there are those who will remember him as a man of exceptional ability and a strong and genial character.

Since, apart from his considerable organising ability, his best work was of a purely scientific nature, he received his greatest and most just appreciation mainly from those engaged in similar researches, who, knowing how much he had already accomplished, saw in him the sure promise of even greater things in the future, a promise which I feel confident would have been amply fulfilled had his life not been so prematurely cut short.

Most of us who knew Holmes intimately will probably at the moment be thinking of him very much from our own personal point of view as one of the very best of good comrades.—Yours truly,

H. C. WILKIE, F.R.C.V.S., F.Z.S.

Personal.

PALLIN—LASCELLES. On the 23rd April, at St. Peter's Church, Pennal, very quietly owing to the war, by the Rev. Gomer Price, Rector of the Parish, Farrer Pallin, Captain, Army Veterinary Corps, only son of the late Major S. L. Pallin, A.V.D., and Mrs. Pallin, Badby, Daventry, to Elizabeth Constance (Sissy), only daughter of Mr. and Mrs. John Lascelles, of Penmaen, Machynlleth

TRIGGER—SHIRLEY. On the 5th inst., at Etruria Wesleyan Church, William Trigger, F.R.C.V.S, of Newcastle-under-Lyme, to Hilda Anne, youngest daughter of Jesse Shirley, Etruria, Staffs.

Mr. H. B. EVE has recovered from his recent illness, and has now returned to duty—transport in charge of remounts.

Veterinary practice in New Zealand—no law

The following extracts are from a long report—with portrait—in New Zealand *Truth*, published at Wellington, and claiming to be "The paper with the largest circulation throughout the Dominion."

"Some time last year there descended upon Dunedin a top-hatted, frock-coated and altogether sartorially perfect coot, who styled himself as 'Doctor' Donnelly. The swelldom of Scotsopolis judged Donnelly in much the same way as a sparrow chooses a cherry—by its outside appearance—which being just about the dizzy limit of perfection in the self-tagged 'Doctor,' secured for him a free leg in that superfluity which is locally called the 'social swim.' Donnelly's credentials were not asked for and his *bona fides* were generally reckoned to be sufficiently square dinkum to assure him the confidence and respect of the most pawky porridge partaking potentates in the dour metropolis. Thus it was that Donelly lived in clover for a time. There was enough free beer for him to bathe in, if he felt that way. Odor cabs, also, were placed at his disposal, and so, to a limited extent, were quite a few of Dunedin's socially puffick ladies. Life, with the dear doctor, buzzed along on ball-bearings, and it is quite on the cards, if he had been allowed another couple of fathoms of hemp, he

would have shied Mayor Shacklock out of office and planted his own well chiselled bosom in the vacant chair.

* * *

'Doctor' Bryan Charles Donnelly was duly paraded in the Dunedin S.M.'s Court, and the 'Tec Department handed out the information that Donnelly had been known to the Sherlocks for the brief space of 12 or 14 years, and it was quietly considered that he was a bit balmy on the crumpet, although he was artful enough with it to hoodwink the educated scions of society. Since 1902 he had been before the Court several times, seven of which appearances were in respect to false pretences.

* * *

After negotiating his three months' compulsory relaxation from practice, 'Doctor' Donnelly turned his helm northwards and, after calling in at several wayside ports, either for ballast or to replenish his tanks, dropped anchor at Leeston, a rural spot, half a dozen pubs south of Christchurch. Donnelly subsided in Leeston's most comfortable armchair and decided to, open up as a veterinary surgeon. As a consequence Bryan Charles Donnelly, 'M.R.C.V.S.,' was last week, haled before the Court for the tenth time. Two Jays Pay occupied the bench, and Donnelly was charged on the information of the S.P.C.A., with cruelly ill-treating Farmer Barnett's Clydesdale mare, Jewel of Green Meadow, on December 16.

Lawyer Gresson prosecuted on behalf of the Society, and 'Doc.' Donnelly, who had apparently lost none of his 'dash,' played off his own bat.

Lawyer Gresson explained that the 'Jewel's' prematernal ailments had been attended to by Mr. Machattie, M.R.C.V.S., until he left the district, to go to Egypt, in charge of the Expeditionary Forces' gee-gees. Then "Doc." Donnelly was engaged to look after the mare. G. H. Barnett, the owner of the mare, was himself an experienced man in veterinary cases, but, Jewel of Green Meadow being a valuable bit of horseflesh, he preferred the extra precaution of employing a qualified veterinary surgeon. On the morning of December 16, Barnett saw the "Jewel's" foal was due and he immediately sent for "Doctor" Donnelly and a neighbouring farmer named Chambers, who knew a good deal about horses. Barnett and Chambers examined the mare, and found a normal presentation, except that the foal's head was very slightly turned to one side.

When "Doc." Donnelly arrived on the scene, he ordered an employment of traction, which proved of no avail. Barnett then found that the foal was dead. He placed the head in the correct position, and the foal, though dead, was delivered without any further trouble. As the result of the treatment ordered by "Doctor" Donnelly, the Jewel of Green Meadow passed in her checks shortly afterwards. Barnett had sued Donnelly for the value of the mare, and he confessed judgment, which was practically an admission of negligence. It would be shown that Donnelly had been guilty of cruelty as well as negligence. "Doctor" Donnelly, it was stated, had held himself up in Leeston to be a Member of the Royal College of Veterinary Surgeons.

Donnelly: Er—haw, haw, might I ask what that has to do with this case?

Lawyer Gresson: The question of qualifications has an important bearing on the case. It is only right for the Court to know what degree of skill the defendant was able to use in treating the mare.

The two Jays Pay chewed the "Doctor's" objection for some time, and then unanimously resolved not to go into the point at the present stage.

G. H. Barnett, owner of the now defunct draught mare, bore out his counsel's statement, and added that before Donnelly's arrival, Barnett and Chambers had ascertained that the foal was alive. He did not approve of the treatment, but bowed to the "superior" knowledge of "Doc." Donnelly, as a qualified "vet." When he engaged "Doc." Donnelly, he quite understood that he was a fully qualified veterinary surgeon.

Lawyer Gresson explained that *any person, whether qualified or not, could set up in New Zealand as a veterinary surgeon.* He handed the bench a copy of the certificate given by "Doc." Donnelly, and setting out the cause of the mare's death as "septic."

Cross-examined by the defendant, Barnett said he was sure his mare didn't have "thorochpin."

Alexander Adair Johnson, F.R.C.V.S., stated that, under no circumstances, would there be any justification for applying traction to remove the foal, without first ascertaining its position. It would be gross incompetence and cruelty. Witness reckoned he had had a good deal of experience in similar cases, the New Zealand farmers, as a rule, being so skilled in veterinary work that qualified men were called in only for unusual cases.

Witness could remember only two cases in Canterbury wherein traction had been wrongly employed by farmers. Questioned as to the cause of the mare's death, witness said that the employment of force had undoubtedly caused her demise, which resulted from the consequent shock. Death could not have been caused by septicæmia, which Donnelly's certificate indicated. Invariably that disease took several hours to develop.

'Doc.' Donnelly denounced the charge as being an utterly absurd one to be brought against him, above all people. He was a lover of animals and, as a matter of fact, had been a member of the Society for tha Prevention of Cruelty to Animals for two years in Otago. In treating the 'Jewel of Green Meadows' he had employed the most humane methods possible, and in order to prevent the equine from suffering, he had actually injected four grains of morphine, so that it was clear, she could feel nothing while the 'Doc.' was operating.

The Inspector for the S.P.C.A. gave evidence regarding a somewhat similar case in which 'Doc.' Donnelly was fined £4 and costs.

The Bench retired to consider its 'points' and returned an hour later with a verdict of guilty. 'Doc.' Donnelly was mulcted in £1 and costs, the Bench holding that he had not wilfully ill-treated the mare, but that having caused her unnecessary suffering through unskilful treatment, he had committed an offence according to law."

Sheep at pasture—Liability for mortality.

At Sevenoaks County Court on Monday, 19th ult., before Judge Parry, Frederick Newman, of Waterdown Farm, Frant Forest, Tunbridge Wells, was sued by Launceston Elliot, of Green Lanes Farm, Sevenoaks, for £27 8s. 8d. in respect of keep for lambs which defendant placed on plaintiff's pasture. There was a counter-claim for a number of lambs that died whilst under plaintiff's care. Mr. W. H. House was for plaintiff, and Mr. D. Murton Neale for defendant.

Mr. House said the claim was for grazing 100 lambs, at 4d. per head per week, from September 2 till December 30 last, with allowance for certain lambs which died. The arrangement was made by defendant with Mrs. Elliot, he having called when plaintiff was away from home, on August 31, and Mr. Newman at that time examined Springhill and Witley Bank farms, where the lambs were to be grazed. Mrs. Elliot told defendant her husband would take the lambs at 4d. per week per head, but he said he would pay £50 for their keep till the end of March. Subsequently some of the lambs died, and the defendant on each occasion was acquainted with the fact in writing.

Plaintiff, in the witness box, bore out the counsel's statement. The first lamb died on November 23, and plaintiff's wife immediately wrote to Mr. Newman, who,

however, took no notice of the letter. Others died, and Mr. Newman was again written to, and he then replied, saying he hoped the others would be all right and that it was very bad weather for sheep. After others died, plaintiff again wrote and asked him to come over and see them, as he thought it was rather a big percentage of deaths. On December 8 Mr. Newman visited the farm, and was asked if he could see anything wrong with the pasture, he replying that there was nothing wrong with it.

By Mr. House: Defendant said the pasture could not be better, and, before going away, repeated that he had seen no other field to suit lambs better, and said the weather was enough to kill anything. In further reply to Mr. House, plaintiff said on Mr. Newman's second visit to the farm, he suggested that a veterinary surgeon should be called in, but Mr. Newman's reply to this was: "I have had sixty years' experience with sheep, and they could do nothing in a case like this. It is the terrible weather we have been having."

In cross-examination, plaintiff said he had heard it was the custom that where lambs or sheep were taken for keep, the graziers were not paid for any that might die during the period of grazing, but if he sent sheep to graze he should have expected to pay for them up to the time they died. Plaintiff denied that he kept the lambs too long on one pasture without change.

Mr. Murton Neale said the counter-claim was for the thirty-five lambs that died before and after leaving plaintiff's grazing.

Defendant, in the box, said that during his first visit to the farm he told Mrs. Elliot that if they could take the lambs and do them well he would pay 10s. per week for 100 lambs. It was rather more than he was paying elsewhere. The lambs came from Romney Marsh and belonged to a Mr. Adams, but he had an interest in them. Out of 550 he sent elsewhere he only lost 16, against 22 out of Mr. Elliot's 100. On October 10 and 12 he visited the farm, and again on December 8. The lambs were then in the same field, and he told Mr. Elliot they wanted moving, and also to take out the small ones and put them separate.

Several farmers gave evidence with regard to the number of lambs they had lost during the season, the majority being two per cent.

Mr. David Pugh, M.R.C.V.S., Sevenoaks, said he held a post-mortem examination on some of the lambs, and found them to be suffering gastro-enteritis, which was caused by a worm. He should say the lambs had not been starved, as they had fat in them.

His Honour, in giving judgment, said it it was suggested that the plaintiff had been guilty of neglecting the animals, and in that case it would have amounted to criminal behaviour. Plaintiff must have felt them to be a most serious charge, and whether it was 78 lambs returned or only 40, the real gist of the case was as to whether they had ever been properly treated. No one could conceive anything worse than starving sheep, but Mr. Newman had entirely failed to prove neglect, and it was ludicrous for him to come to the Court and say there was not enough food. His Honour found that the custom not to pay for dead sheep did exist, and therefore gave judgment for the keep of 78 sheep at 4d. per head, £22 2s., with costs. He also found for plaintiff, Elliot, on the counter-claim.—*The Farmer and Stock Breeder.*

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks (a)	Animals.	Out-breaks (a	Animals.	Out-breaks (b)	Animals.	Out-breaks (b)	Animals.	(b)	Out-breaks (a)	Slaughtered. *
Gr. BRITAIN. Week ended May 1	18	20					31	85	1	117	543
Corresponding week in 1914 ...	22	23			1	1	43	65		107	1481
Corresponding week in 1913 ...	8	9			2	11	52	95		58	768
Corresponding week in 1912 ...	12	12			3	4	44	95	6	87	992
Total for 18 weeks, 1915	285	317			11	16	‡220	‡524	144	1392	6089
Corresponding period in 1914 ...	337	360	11	74	34	80	1139	2055	139	1272	12849
Corresponding period in 1913 ...	242	250			61	204	1295	2693	112	748	10098
Corresponding period in 1912 ...	406	456			60	136	1815	4067	156	1193	15017

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities. † Counties affected, animals attacked:

Board of Agriculture and Fisheries, May 4, 1915 ‡ Figures for three weeks only.

IRELAND. Week ended May 1	...	...	...	...	...	...	Outbreaks 1	5	8	59
Corresponding Week in 1914 ...	...	...	4	63	...	...	...	7	4	30
Corresponding Week in 1913 ...	...	...	...	...	...	...	1	9	10	14
Corresponding Week in 1912 ...	...	...	...	...	...	...	3	3	3	102
Total for 18 weeks, 1915 ...	1	1	...	...	1	3	17	218	103	626
Corresponding period in 1914 ...	...	...	70	890	...	...	39	318	92	425
Corresponding period in 1913 ...	...	...	...	...	...	...	90	254	58	308
Corresponding period in 1912 ...	1	1	...	...	...	...	34	243	90	814

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, May 3, 1915

NOTE.—The figures for the Current Year are approximate only. * As Diseased or Exposed to Infection